Return on Investment (ROI) Program Funding Application

This template was built using the ITD ROI Submission Intranet application.
FINAL AUDIT REQUIRED: The Enterprise Quality Assurance Office of the Information Technology Department is required to perform post implementation outcome audits for all Pooled Technology funded projects and may perform audits on other projects.

This is a Pooled Technology Fund Request. Amount of funding requested: $522,350.00

Section I: Proposal

Date:	8/16/2002
Agency Name:	Natural Resources
Project Name:	Integration of AFO Databases & New Technology
Agency Manager:	Barbara Lynch
Agency Manager Phone Number / E-Mail:	(515)242-6346 / barbara.lynch@dnr.state.ia.us
Executive Sponsor (Agency Director or Designee):	Wayne Gieselman

D. Statutory or Other Requirements

Is this project or expenditure necessary for compliance with a Federal law, rule, or order?
☑ YES (If "Yes", cite the specific Federal law, rule or order, with a short explanation of how this project is impacted by it.)
Explanation:
Under the Clean Water Act of 1972, National Pollutant Discharge Elimination System (NPDES) permits are required for all open feedlots larger than 1000 animal units. Smaller open feedlots must meet pollution control requirements, including installing solids settling facilities. This law has not been rigorously enforced by the DNR until recently. The DNR began a comprehensive, cooperative program to enforce open feedlot requirements in 2001. To provide services to the 1,571 open feedlot producers who registered for the program and want to improve environmental conditions on their lots, the DNR needs personal digital assistants (PDAs), global positioning systems (GPS) capability, feedlot design programs, and improved databases. Approximately 300 open feedlots need NPDES permits. NPDES permits will be required for larger confinement feeding operations by the federal animal feeding operations/concentrated animal feeding operations (AFO/CAFO) law finalized in December, 2002. DNR staff must issue NPDES permits for a minimum of 950 confinement feeding operations that currently hold construction permits. All NPDES permits issued by the DNR must meet federal requirements for public notice, tracking and compliance. Under the existing and new federal requirements, facilities required to have a NPDES permit must also control all runoff up to and including the 25-year, 24-hour storm. Providing a program that field office staff can use on-site to identify design alternatives for above- and below-permit threshold facilities will improve field office efficiency, enhance producer satisfaction and provide technical assistance to the producers in a uniform manner. Requirements for land application of manure according to a phosphorus index are a key component in federally mandated comprehensive nutrient management plans (CNMP). The DNR must update the current manure management plan forms, including an electronic form that greatly facilitates the producer's ability to meet new federal requirements. The Clean Water Act of 1972 also mandated the DNR to identify impaired waters on a 303d list. The DNR was also required to prepare a Total Maximum Daily Load or TMDL for any water body listed on the 303d list. Many states, including Iowa, lagged behind on this effort, but recent federal court cases have forced the US Environmental Protection Agency (EPA) to enforce the states development of TMDLs. Iowa has an active TMDL program that can be briefly summarized as the diagnostic and prescription for a watershed. Many waters on the impaired list have identified nutrients, organic materials and fecal coliform as the source of impairments. Other waters are impaired due to siltation – which is closely tied to phosphorus enrichment. Increased

computer integration of livestock and poultry operations records can greatly enhance the DNR's ability to identify problem areas and develop practical alternative solutions to water quality problems on a watershed basis. EPA is strongly encouraging the states to use FITS 2, a template designed to standardize data entry for all environmentally-regulated facilities within the U.S. FITS 2 has been piloted in a number of states, and was developed by EPA and the Environmental Council of States (ECOS). Evaluating the current database and developing additional components of that database to be compatible with FITS 2 will eventually allow data collection and interpretation that cross program lines. For example, the DNR could check if a facility with an open feedlot also had a private well, a storm water permit or a water withdrawal permit. Eventually, producers could also track the status of their permit applications through FITS 2.

Is this project or expenditure required by state law, rule or order?

☑ YES (If "YES", cite the specific state law, rule or order, with a short explanation of how this project is impacted by it.)

Explanation:

House File 644, enacted in the spring of 2003, completely changed how commercial manure applicators are issued certificates. That legislation also establishes a three-tiered fee structure (instead of the current system with one fee). The manure applicator database will need to be redesigned to track certificates issued to businesses and their representatives (not the 1400 or 1500 individuals currently certified); and to track the payment of three different types of fees.. Senate File 2293, enacted on April 29, 2002, required the DNR to develop a way for producers to submit manure management plans (MMPs) electronically. It also required producers to pay annual fees with the MMP submittal – requiring the DNR to notify producers and track compliance. The new law reduced thresholds requiring smaller confinement feeding operations to apply for permits and submit MMPs. Other provisions of the new law require geographic information to apply to the master matrix, and to locate areas of karst terrain, sinkhole drainage and floodplains. Senate File 2293 required producers to land apply manure according to a phosphorus index for the first time, in addition to accounting for crop uptake needs for nitrogen. The DNR must redesign the electronic (and paper) MMP to include phosphorus index-based plans and to link to the main animal feeding operations database. Senate File 2293 created a Master Matrix (a system that counties can use to require producers who need a construction permit to meet higher standards in their communities). A record number of counties, 87, decided to adopt the Master Matrix. A better web-enabled database will help the DNR track what pollution-control and community-based practices producers are adopting when building a large confinement facility. The passage of Senate File 2293 in 2002 required the DNR to monitor air quality around confinements for hydrogen sulfide, ammonia and odors. In 2003 and 2004, the monitoring information will be used to develop air quality standards. Once those standards are in place, tne DNR will need to link compliance with air quality to the animal feeding operations database.Existing state laws (House File 519 passed in 1995, House File 2494 passed in 1998) and regulations (Iowa Administrative Code Chapters 28, 61 and 65) requires the DNR to evaluate and issue construction and operation permits for animal feeding operations within 60 days, to train and test 3,000 manure applicators annually so that they can become certified, to review and issue NPDES permits (including run-off control basins) for permitted open feedlots, to inspect all earthen manure storage basins on an annual basis, to evaluate MMPs within 30 days of submittal, and to enforce state and federal clean water laws. The Governor expects departments to achieve 100 percent e-commerce, which is the use of digital systems for government processes and transactions, especially using the Internet. This project will provide the tools, including equipment, software, training and electronic forms, to enable DNR animal feeding operations staff to meet the Governor's expectation for use of digital systems. The project will also help DNR staff meet the requirements of an administrative rule that requires electronic reporting and information technology standardization. This project will provide field office staff with the technology they need to enforce existing laws; producers with the convenience and ease of electronic communications; DNR permit engineers and MMP reviewers with the tools they need to complete permit application and MMP reviews in a timely manner.

Does this project or expenditure meet a health, safety or security requirement?

☑ YES (If "YES", explain.)

Explanation:

Manure spills and failure of manure storage structures (such as above-ground slurry stores and earthen basins) present potential risks to ground and surface waters. An integrated database is invaluable for the DNR to provide emergency response. Hydrogen sulfide and ammonia are known to cause harmful effects to people exposed to excessive levels. For example, ammonia may cause respiratory problems, and

hydrogen sulfide can cause eye irritation, dizziness, coughing, and headaches. Air monitoring efforts continue near animal feeding operations to determine if harmful concentrations of these pollutants exist near these facilities. If harmful concentrations are found, the DNR will need to integrate the animal feeding operations database with air quality monitoring and regulatory information. This effort will help to offset these emissions and improve health and safety for nearby residents.Locating animal producers and site-related geographic information systems (GIS) information regarding soil suitability and ground water susceptibility will be critical to ensure proper disposal of animal carcasses in the event of a bioterrorist attack, an epidemic such as the spread of foot and mouth disease or a disaster. Providing personal digital assistants (PDAs) and global positioning systems (GPS) to field office staff will provide precise locations of affected animals to the central office, allowing GIS experts to determine site suitability for burial of animal carcasses if large numbers of carcasses need to be disposed of quickly. Better communications between field/central offices and field staff will allow quicker and more accurate decisions to be made under emergency conditions such as a spill, epidemic or bioterrorist attack. MMPs and permit information are used to track fields for land application of manure to prevent overapplication of nutrients that could lead to ground or surface water contamination and health risks. Future mapping of animal concentrations can provide improved planning for the siting of confinement feeding operations to prevent air and water quality problems.Database integration and improved programming can provide required security on electronic Manure Management Plans (MMPs) and applicator certification databases for field office and customer access.

Is this project or expenditure necessary for compliance with an enterprise technology standard?
☑ YES (If "YES", cite the specific standard.)
Explanation:
All purchases of equipment and software will meet the enterprise technology standards that are in place at the time of equipment purchase. ITD's requirements are for standard software and hardware utilization and this project will enable all animal feeding operations, field office and licensing staff to use current and uniform technology. Original data entry was done directly into tables on three of the four databases that were merged, including the Open Feedlot Registration and environmental priority ranking, the Manure Management Plan (MMP) summary data, the Construction Permit summary data, and the Field Inspection and Compliance database. Therefore, many inconsistencies with data entry occurred. Part of the project involves cleanup of existing data within the current database and updating the electronic forms that require consistent data entry on the part of staff and producers (electronic MMP). The manure applicator certification database was recently converted from Paradox to Access. Staff members need training to use this standardized, current program. Portions of the applicator database need to be integrated or linked with current database that contains permit and MMP information. A consultant will need to evaluate the feasibility of converting applicator annual training and tests to an electronic format. Software will need to be developed to provide the ability to interface between the existing database, the electronic MMP, and to allow information from personal digital assistants (PDAs) and global positioning systems (GPS) units to be uploaded into the databases.

[This section to be scored by application evaluator.]
Evaluation (20 Points Maximum)
If the answer to these criteria is "no," the point value is zero (0). Depending upon how directly a qualifying project or expenditure may relate to a particular requirement (federal mandate, state mandate, health-safety-security issue, or compliance with an enterprise technology standard), or satisfies more than one requirement (e.g. it is mandated by state and federal law and fulfills a health and safety mandate), 1-20 points awarded.

E. Impact on Iowa's Citizens

a. Project Participants

List the project participants (i.e. single agency, multiple agencies, State government enterprise, citizens, associations, or businesses, other levels of government, etc.) and provide commentary concerning the nature of participant involvement. Be sure to specify who and how many **direct** users the system will impact. Also specify whether the system will be of use to other interested parties: who they may be, how

many people are estimated, and how they will use the system.
Response:

There are many project participants. This technology would allow the DNR to provide better service to citizens, other agencies and groups by being able to share data. Direct participants include the Iowa Department of Agriculture and Land Stewardship, Iowa Department of Public Health, Iowa Department of Public Defense, and Iowa Department of Economic Development; federal agencies such as the EPA, the Natural Resources Conservation Service and the Farm Service Agency; commodity groups, such as the Iowa Cattlemen's Association, the Iowa Pork Producers, the Iowa Turkey Federation, the Iowa Poultry Association, the Iowa Dairy Products Council; farm groups such as Farm Bureau Federation and the Iowa Farmer's Union; the Iowa State University Extension; and Iowa State Association of Counties. Other project participants include environmental groups such as the Sierra Club, Hawkeye Fly Fishermen, and the Iowa Environmental Council. The data through this improved database will also be available to both the Legislative branch and to the Executive branch. With the aid of the personal digital assistants (PDAs) and global positioning systems (GPS), more accurate data can be acquired in the field and will be uploaded to the database, thus eliminating human error and making the data more accurate to make better decisions based on that data. By improving the manure applicator certification database and linking it to the larger animal feeding operation (AFO) database, it will improve our ability to work with the ISU Extension concerning the certification testing and training.

b. Service Improvements

Summarize the extent to which the project or expenditure improves service to Iowa citizens or within State government. Included would be such items as improving the quality of life, reducing the government hassle factor, providing enhanced services, improving work processes, etc.
Response:

Iowa ranks number one in the United States in pork production, egg laying, corn production and soybean production. Iowa ranks 6th in beef production. The location, management and operation of animal feeding operations has become a contentious issue within the state. It's essential that the DNR be able to provide timely, science-based information for the Executive and Legislative branches of state government.Expanded and updated software will improve the accuracy for reporting. Animal feeding operations is a high profile and controversial program area in Iowa. The DNR receives many requests for information from the Governor's office, legislators, public interest groups, producers, individual citizens and the media. An integrated system will provide better and timelier service to DNR's many customers. It will enhance DNR's ability to plan effectively and enable policy makers to make better decisions. The end result will be better living conditions and improved environment for Iowans. An easily accessed and user friendly database will: 1. reduce the frustration of producers and consultants who must use the DNR's manure management plan (MMP) form. Having that available in an electronic format will enable annual submittals of MMPs to be accomplished in a quick, efficient and less costly manner. 2. ensure identical information is quickly available to staff throughout the state allowing them to provide better customer service. 3. provide better management of critical public use areas, high quality water resources and other environmentally sensitive areas. 4. give the DNR the ability to send more information electronically in emergencies such as a manure spill, a fish kill or an epidemic, and provide public notice to downstream livestock producers and public water supplies. 5. allow DNR staff to increase their efficiency and reduce the turn around time for processing MMPs and permit applications. This should increase producer's satisfaction levels because it will reduce the time between submitting an application or nutrient plan and the DNR's approval for a producer to build or populate a building. Personal digital assistants (PDAs) and geographic information systems (GIS) capabilities will promote better communication between customers and staff members, who can provide alternatives while they are at the customers' sites. These technologies will help standardize the options that customers are offered, addressing complaints that different answers are given in different parts of the state. The GIS capabilities will allow the DNR to accurately track producers who are not complying with state law and help to bring them into compliance.Better training of staff will equip more staff members to respond to customer requests, spreading the workload more evenly and providing more efficient customer service.

c. Citizen Impact

Summarize how the project leads to a more informed citizenry, facilitates accountability, and encourages participatory democracy. If this is an extension of another project, what has been the adopted rate of Iowa's citizens or government employees with the preceding project?
Response:

An integrated database, including the electronic submittal of manure management plans (MMPs), would: 1. provide a more efficient way for producers to submit their MMPs, 2. provide security for the citizens to know sites can be identified for disease control through the geographic information systems (GIS) capabilities, 3. provide more efficient internal communications, thus being able to provide the information to the public accurately and in a timely manner, 4. allow field staff to spend more time on compliance issues with the producers when there is an emergency and to have more time to provide technical support. An integrated database will provide more efficiency, allowing staff time to be devoted to health and safety issues, i.e. ground water, drinking water, and recreational water uses or dealing with disease outbreaks, fish kills or other emergencies. Other major stakeholders are the DNR staff members who cannot access data in a timely, accurate and consistent manner, and must keep compliance records by hand. Integrating geographic information systems (GIS) and global positioning systems (GPS) capabilities with traditional recordkeeping will allow better resource planning and quicker response to internal and external information requests. Citizens and public interest groups are other stakeholders. An integrated database will allow staff to respond to frequent requests for summary data and for information on individual producers from citizens or the media. An integrated database will allow staff to look up a history of a producer's activities and any legal actions filed against him or her. The mass media is another stakeholder. The animal feeding operations section is a high profile program that involves many press inquiries on numbers of permits issued, numbers of MMPs submitted, numbers of MMPs reviewed and approved, numbers of animal feeding operations out of compliance, etc. An integrated database will allow staff to respond to media requests without time consuming and potentially inaccurate hand searches through paper files. Commodity groups are major stakeholders. These groups frequently ask for mailing lists or data on certain subgroups, such as, all the commercial manure applicators or all the open feedlots that registered. An integrated database will allow staff to respond to these requests more quickly and more accurately. Legislators have a major stakehold in receiving accurate and up-to-date information. During the each legislative session, the DNR is frequently asked to provide information and maps on animal feeding operations. This information was used to draft legislation in 2002 and to aid in understanding resource concerns. Because the database was still under development in 2002, the DNR could not always respond in a timely or complete manner. The animal feeding database needs to be enhanced to provide for the information needs of the next legislative session. Another goal of this project is to evaluate adding or linking the enhanced database with other existing databases (the electronic MMP, air quality monitoring, PDAs and the manure applicator database)

d. Public Health and/or Safety

Explain requirements or impact on the health and safety of the public.
Response:
<div align="center">

[This section to be scored by application evaluator.]
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Evaluation (10 Points Maximum)

- Minimally improves Customer Service (0-3 points).
- Moderately improves Customer Service (4-6 points).
- Significantly improves Customer Service (7-10 points).

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[This section to be scored by application evaluator.]
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Evaluation (15 Points Maximum)

- Minimally directly impacts Iowa citizens (0-5 points).
- Moderately directly impacts Iowa citizens (6-10 points).
- Significantly directly impacts Iowa citizens (11-15 points).

F. Process Reengineering

Provide a pre-project or pre-expenditure (before implementation) description of the impacted system or process. Be sure to include the procedures used to administer the impacted system or process and how citizens interact with the current system.

Response:

1. Four existing AFO databases were merged in FY02, including the Open Feedlot Registration and environmental priority ranking, the Manure Management Plan (MMP) summary data, the Construction Permit summary data, and the Field Inspection and Compliance data. This project will integrate those programs with the existing Manure Applicator Certification database and with four new applications: air quality monitoring, personal digital assistants (PDA) and global positioning system (GPS) for field office applications, and the Open Feedlot Design Alternatives program. The electronic MMP submittal, will be updated to include phosphorus index-based plans. The current database will be enhanced and expanded beyond the existing 32 standard reports to provide additional information to stakeholders. Project goals include a state-mandated project to allow livestock producers to file all MMPs electronically, to evaluate the existing database to ensure accurate connections between the on-line MMP submittal in Internet format and the existing database, to purchase PDA and GPS hardware, to develop software for new applications (PDA, GPS, open feedlot design and updated electronic MMPs (eMMP), and to evaluate an electronic, web-based training and testing system for manure applicator certification. Another major project goal is to ensure that the DNR's one-stop database structure is based on and compatible with the Facility Identification Template for States (FITS 2), a standard developed by the U.S. Environmental Protection Agency (EPA) and the Environmental Council of States (ECOS) to identify and integrate records for all environmentally–regulated facilities in the U.S. Other project goals include major clean-up of redundant or duplicate data that resulted from the merge of four databases into a relational database. Integration of new and existing databases should allow faster access, store more data and provide better field access. Finally, training DNR staff will be an essential component of the proposal. Equipment will need to be purchased to facilitate training and public information efforts. 2. Currently manure applicator certificate information is available in the Des Moines office, with an Access file periodically updated as an Excel file on a quarterly basis and sent to ISU Extension. The DNR field offices have limited access to this database, but are able to check the status of two types of manure applicators (commercial and confinement site). The database is not designed to handle recent changes in state law (House File 644) which created three types of fees and three types of commercial applicators.3. The DNR and ISU Extension currently offer manure applicator training and testing on a limited basis, with not all counties in the state providing that service to the 3000 applicators who must take annual training. 4. Currently MMPs are available in a paper form and electronically. None of the details of the MMP are entered into the existing database. Only minimal summary information is available through the database: owner, contact person, location, etc. Neither form (paper or electronic) provide for phosphorus-based plans using the phosphorus index. 5. The DNR is under federal mandate to enforce the Clean Water Act and bring all open feedlots greater than 1,000 animal units into compliance with the law. Currently, Iowa lacks the infrastructure to help these producers reach compliance. There is a shortage of knowledgeable government staff (DNR, the Natural Resources Conservation Service or NRCS, and Extension engineers) who can provide engineering and technical services to design open feedlot structures. There is also a shortage of private engineers who are capable and interested in providing services to these potential customers. 6. Except for a few staff members, the DNR field offices do not have the global positioning system (GPS) equipment that would allow the offices to provide geo-locations of animal feeding operations. 7. Only a few DNR field staff have the capability to take computers and programs into the field where they are working. Except for the individuals using PDAs and notebooks on a trial basis, all data must be entered later at the office into desktop computers. Only two forms have been developed to use in field office assessments; and preliminary data indicates that those forms need to be refined.8. Currently the DNR field office and the animal feeding operations section in the central office have only limited access to power point projectors, laptop computers and audiovisual equipment. 9. Combining four databases in 2002 created a complicated relational database that has data entry errors, duplicates and other suspect data. The ability of staff to use such a complex database depended on their familiarity with Access and with relational databases. The addition of 12 new staff members compounds the problem. Current updates to the system have made the database much more easily accessed through a sequel server and web enabled system. However, staff must now learn to use Crystal Reports (on the front end) if they need individual queries. Written documentation for using the database must be developed. Additional training will be needed for staff to use Crystal Reports, the revised database, tablets and PDAs. This training and

documentation will increases staff morale, trust in data integrity and efficiency

Provide a post-project or post-expenditure (after implementation) description of the impacted system or process. Be sure to include the procedures used to administer the impacted system or process and how citizens will interact with the proposed system. In particular, note if the project or expenditure makes use of information technology in reengineering traditional government processes.

Response:
1. Enhancing the database, training staff and merging/or linking additional databases will continue to create a statewide, comprehensive database of animal feeding operations that will allow tracking of federal- and state-mandated data while allowing better access for producers, citizens and DNR staff. The system, when completed, will provide a one-stop shop for information on specific livestock or poultry operations, including status of required permits and plans, compliance with state and federal laws, and information on location and size. The integrated database will allow comprehensive planning based on a geographic or watershed basis. 2. Revising the manure applicator certification database and evaluating the potential for offering web enabled training and tracking will increase the efficiency of staff members and the Iowa State University staff members who provide education for manure applicators. Staff will be able to take training on a current software program, which will allow them to process data more easily. Updates to the program will allow the DNR to certify and track manure applicators compliance with state training requirements consistent with recent changes in state law. Field office and central office staff must be trained to use the new database. A consultant must evaluate the database to see if it can be linked or merged with the larger animal feeding operations database. 3. Converting manure applicator training to a computer-assisted or web-based application will make it more convenient for 3000 producers to take a class. It will also allow long distant training, so that those who are out of state during the training will still be able to complete it. Converting the test to a web-based or other computerized form will decrease staff time for scoring tests and sending paper copies to Des Moines. Some security issues exist and must be surmounted, but computerized training and testing would allow staff to spend more time on technical assistance and plan review. 4. Updating the electronic (and paper) MMP to include phosphorus will allow producers to update their plans annually (required by recent passage of Senate File 2293) and submit them with a minimum of difficulty. An electronic MMP will also streamline the review process, by screening entry or calculation errors and requesting the producer to resubmit that information. That will reduce staff time for review. The electronic MMP database must be evaluated and merged/or linked with the animal feeding operations database. 5. The proposed open feedlot design alternatives program will provide a quick and consistent way for DNR staff to provide technical assistance in the field to present the alternatives to producers to help them solve problems on their open feedlots. This program will help producers make a rational decision on the types and placement of structures. 6. Obtaining global positioning systems (GPS) equipment would greatly enhance the accuracy of the many maps that the DNR creates annually for a variety of interest groups. Global positioning capability is frequently required to track compliance with state law and to determine trends.7. Purchasing personal digital assistants (PDAs) and developing the software that will link them to the existing database will free up staff time in the field and in the office. The PDAs and programs will enhance the data quality by using a standardized form for data entry and eliminating transcribing and entering handwritten notes into the database after returning from the field. 8. Purchase of seven (7) power point projectors and/or audiovisual equipment (one per field office and one for central office) will allow DNR field office staff to get the training that they need from the newly integrated database. It will also allow DNR staff to use data from the integrated databases in presentations to the many groups that are interested in animal feeding operations issues. 9. Creating a "map" of the relational database that indicates how tables are structured and related to each other, documenting data entry requirements, and cleaning up data entry errors and duplicates will improve data integrity and enhance the staff's ability to access, enter and use data. Training and documentation will improve staff's ability to use the database and to enter data correctly. All of these efforts will help improve staff's trust in the data, efficient use of the database and morale.

[This section to be scored by application evaluator.]

Evaluation (10 Points Maximum)

- Minimal use of information technology to reengineer government processes (0-3 points). ☐
- Moderate use of information technology to reengineer government processes (4-6 points).
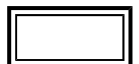
- Significant use of information technology to reengineer government processes (7-10).

Evaluation (5 Points Maximum)

- The timeline contains several problem areas (0-2 points)
- The timeline seems reasonable with few problem areas (3-4 points)
- The timeline seems reasonable with no problem areas (5)

H. Funding Requirements

On a fiscal year basis, enter the estimated cost by funding source: Be sure to include developmental costs and ongoing costs, such as those for hosting the site, maintenance, upgrades, ...

	FY05		FY06		FY07	
	Cost($)	% Total Cost	Cost ($)	% Total Cost	Cost ($)	% Total Cost
State General Fund	$80,000	13%	$0	0%	$0	0%
Pooled Tech. Fund /IowAccess Fund	$522,350	87%	$0	0%	$0	0%
Federal Funds	$0	0%	$0	0%	$0	0%
Local Gov. Funds	$0	0%	$0	0%	$0	0%
Grant or Private Funds	$0	0%	$0	0%	$0	0%
Other Funds (Specify)	$0	0%	$0	0%	$0	0%
Total Project Cost	$602,350	100%	$0	100%	$0	100%
Non-Pooled Tech. Total	$80,000	13%	$0	0%	$0	0%

Evaluation (10 Points Maximum)

- The funding request contains questionable items (0-3 points)
- The funding request seems reasonable with few questionable items (4-6 points)
- The funding request seems reasonable with no problem areas (7-10)

I. Scope

Is this project the first part of a future, larger project?
☐ YES (If "YES", explain.) ☑ NO, it is a stand-alone project.
Explanation:

Is this project a continuation of a previously begun project?
☑ YES (If "YES", explain.)

Explanation:
We have had several small databases for the varying aspects of the feedlot program. Each of these has been successful in its own right, however, there is more and more demand by staff as well as the public to have access to all of the data in a user friendly way. Therefore, we have moved forward and integrated several of the databases together. Last winter we dedicated a few of our staff plus a consultant for 7 months to merge all of the information from several databases (Open Feedlot database, Manure Management Plan database, Construction Application database and the Field Inspection and Compliance database). Funding has been from within the budget of the Department. We need additional dollars to move this project to the next level. This now needs to be further upgraded to allow for the addition of electronic submittal of manure management plans and for the integration of handheld technology for the collection and automated download of data in the field which will greatly reduce the costs required to manually collect and re-key the information at the offices. We need to develop and add an engineering design program for open feedlots. We also need to design the database to be compatible with FITS2 and ECOS. Eventually the goal is to have the database meet the One Step design criteria.

J. Source of Funds

On a fiscal year basis, how much of the total project cost ($ amount and %) would be <u>absorbed</u> by your agency from non-Pooled Technology and/or IOWAccess funds? If desired, provide additional comment / response below.

Response:
Prior to fiscal year 05, a combination of DNR funding and federal grants contributed $75,000 to merge four existing databases and to develop an electronic form for the submittal of manure management plans (MMPs) as required by law. Another $15,000 was allocated to purchase personal digital assistants (PDAs) for field office use as part of a pilot project. In FY03, the DNR dedicated staff time worth $119,529 and hired two consultants to upgrade and web-enable the existing databases. The DNR paid consulting fees of at least $42,465 in FY03 for the AFO/CAFO database update.In FY05, the DNR anticipates contributing another $80,000 (13.28%) in staff time to complete this project. Without additional funding, the DNR will be unable to complete the project.

[This section to be scored by application evaluator.]

<u>Evaluation</u> **(5 Points Maximum)**

- 0% (0 points)
- 1%-12% (1 point)
- 13%-25% (2 points)
- 25%-38% (3 points)
- 39%-50% (4 points)
- Over 50% (5 points)

Section II: Financial Analysis

A. Project Budget Table

It is necessary to <u>estimate and assign</u> a useful life figure to <u>each</u> cost identified in the project budget. Useful life is the amount of time that project related equipment, products, or services are utilized before they are updated or replaced. In general, the useful life of hardware is three (3) years and the useful life of software is four (4) years. Depending upon the nature of the expense, the useful life for other project costs will vary between one (1) and four (4) years. On an exception basis, the useful life of individual project elements or the project as a whole may exceed four (4) years. Additionally, the ROI calculation must include all <u>new</u> annual ongoing costs that are project related.

The Total Annual Prorated Cost (State Share) will be calculated based on the following equation:

$$\left[\left(\frac{Budget\ Amount}{Useful\ Life}\right) \times \%\ State\ Share\right] + \left(Annual\ Ongoing\ Cost \times \%\ State\ Share\right) = Annual\ Prorated\ Cost$$

Budget Line Items	Budget Amount (1st Year Cost)	Useful Life (Years)	% State Share	Annual Ongoing Cost (After 1st Year)	% State Share	Annual Prorated Cost
Agency Staff	$80,000	1	0.00%	$0	0.00%	$0
Software	$61,200	4	100.00%	$0	0.00%	$15,300
Hardware	$75,400	3	100.00%	$0	0.00%	$25,133
Training	$38,000	4	100.00%	$0	0.00%	$9,500
Facilities	$0	1	0.00%	$0	0.00%	$0
Professional Services	$340,000	4	100.00%	$0	0.00%	$85,000
ITD Services	$4,250	4	100.00%	$0	0.00%	$1,063
Supplies, Maint, etc.	$0	1	0.00%	$0	0.00%	$0
Other	$3,500	1	0.00%	$0	0.00%	$0
Totals	$602,350	---	---	$0	---	$135,996

C. Tangible and/or Intangible Benefits

Respond to the following and transfer data to the ROI Financial Worksheet as necessary:

1. Annual Pre-Project Cost - This section should be completed only if state government operations costs are expected to be reduced as a result of project implementation. **Quantify actual state government direct and indirect costs** (personnel, support, equipment, etc.) associated with the activity, system or process <u>prior to</u> project implementation.
Describe Annual Pre-Project Cost:
Ability to enter field notes and inspection forms in the field using PDAs and global positioning is expected to save the cost of three FTEs after equipment is purchased and functional.

Quantify Annual Pre-Project Cost:

	State Total
FTE Cost (salary plus benefits):	$147,000.00
Support Cost (i.e. office supplies, telephone, pagers, travel, etc.):	$7,350.00
Other Cost (expense items other than FTEs & support costs, i.e. indirect costs if applicable, etc.):	$0.00
Total Annual Pre-Project Cost:	$172,725.00

2. Annual Post-Project Cost - This section should be completed only if state government operations costs are expected to be reduced as a result of project implementation. **Quantify actual state government direct and indirect costs** (personnel, support, equipment, etc.) associated with the activity, system or process <u>after</u> project implementation.
Describe Annual Post-Project Cost:
Since three FTEs will be saved by reducing duplicate entries (in the field) and at the office, the DNR will save $172,725

Quantify Annual Post-Project Cost:

	State Total
FTE Cost (salary plus benefits):	$0.00
Support Cost (i.e. office supplies, telephone, pagers, travel, etc.):	$0.00
Other Cost (expense items other than FTEs & support costs, i.e. indirect costs if applicable, etc.):	$0.00
Total Annual Post-Project Cost:	$0.00

3. Citizen Benefit - Quantify the estimated annual value of the project to Iowa citizens. This includes the "hard cost" value of avoiding expenses ("hidden taxes") related to conducting business with State government. These expenses may be of a personal or business nature. They could be related to transportation, the time expended on or waiting for the manual processing of governmental paperwork such as licenses or applications, taking time off work, mailing, or other similar expenses. As a "rule of thumb," use a value of $10 per hour for citizen time.

Describe savings justification:

<u>**Transaction Savings**</u>

Number of annual online transactions:	1
Hours saved/transaction:	2
Number of Citizens affected:	1,950
Value of Citizen Hour	10
Total Transaction Savings:	$39,000
Other Savings (Describe)	$0
Total Savings:	**$39,000**

4. Opportunity Value/Risk or Loss avoidance - Quantify the estimated annual <u>non-operations</u> benefit to State government. This could include such items as qualifying for additional matching funds, avoiding the loss of matching funds, avoiding program penalties/sanctions or interest charges, avoiding risks to health/security/safety, avoiding the consequences of not complying with State or Federal laws, providing enhanced services, avoiding the consequences of not complying with enterprise technology standards, etc.

Response:
State government will benefit by the DNR's compliance with State law (Senate File 2293), enterprise technology standards, and federal law and rules. The federal Clean Water Act of 1972 added requirements in February 2003 that will require the Iowa DNR to issue National Pollutant Discharge Elimination System (NPDES) permits for more than 950 confinement feeding operations and to re-issue NPDES permits every five years. All open feedlots larger than 1000 animal units are also required to have NPDES permits. Livestock and commodity groups will benefit from prompt and efficient service. Environmental benefits will result from compliance with state and federal laws. The U.S. Environmental Protection Agency (EPA) has delegated regulatory authority for the National Pollutant Discharge Elimination System (NPDES) program to the State of Iowa. In a worst case scenario, the DNR could lose its delegated authority and NPDES permits for livestock operations would be issued and enforced by the federal government. This consequence would not be acceptable to most animal producers in the state, because they believe that the DNR is far more likely to understand livestock production in Iowa than is the federal government. While this scenario is unlikely, in the year 2000 the EPA inspected four open feedlots in Iowa and levied substantial penalties on three of them (from $10,000 to more than $160,000).Requirements for land application of manure according to plant uptake needs for phosphorus are expected to be a key component under the federally mandated comprehensive nutrient management plan (CNMP). Offering the DNR's current manure management plans (MMPs) filing requirements in an electronic form will facilitate the producer's ability to meet the new federal requirements. Increased computer integration on livestock and poultry operations can greatly enhance the department's ability to identify problem areas and develop practical alternative solutions to water quality problems on a watershed basis – complementing the work being done under the Clean Water Act of 1972 to identify and repair impaired waters. EPA is strongly

encouraging the states to use a standardized data entry system (FITS2) for all environmentally regulated facilities within the U.S. Developing additional components of the DNR database to be compatible with FITS 2 will eventually allow data collection and interpretation that cross program lines. For example, the DNR could check if a facility with an open feedlot also had a private well, a storm water permit or a water withdrawal permit. Producers could also track the status of their permit applications through FITS 2. Senate File 2293 requires the DNR to develop a system for annual submittal of electronic manure management plans (MMPs). This requirement dovetails with the state requirement for enterprise technology standards and the Governor's expectation of 100 percent e-commerce.

5. Benefits Not Readily Quantifiable - List and summarize the overall non-quantifiable benefits (i.e., IT innovation, unique system application, utilization of new technology, hidden taxes, improving the quality of life, reducing the government hassle factor, meeting a strategic goal, etc.).
Response:
Updating and improving the current database while adding more technological capability for field offices will enhance the DNR's ability to deliver services and technical assistance in the field. The addition of global positioning systems (GPS) and personal digital assistants (PDAs) to field office specialists will improve services to livestock producers. Private and public sector technical specialists vary widely in the alternative engineering solutions they present to livestock producers to comply with the law. Engineering design software that will be incorporated in the PDAs will provide consistent and unbiased planning assistance to producers, allowing them to determine the alternatives that will best meet their needs and budget while fulfilling requirements of state and federal law. Providing a program that field office staff can use on-site to identify design alternatives for above- and below-permit threshold open feedlots will improve field office efficiency, enhance producer satisfaction and provide technical assistance to the producers in a uniform manner. Without this program, a severe shortage of qualified private engineers in Iowa could mean that a significant number of Iowa producers could face federal penalties for not meeting environmental requirements in a timely manner. Use of GPS and PDAs will also allow the DNR to respond quickly and accurately to a bio-terrorist threat or an actual incident. It will also enable the DNR to respond quickly to a contagious disease such as the foot-and-mouth disease that decimated England's animal production and tourist industries recently. A primary role for the DNR if disease or terrorism struck Iowa would be the isolation of the threat and the rapid disposal of the dead animals. The capability to use GPS will be particularly important in identifying soil and geologic structures that can be used for animal burial without threatening surface or ground water resources. Finally, the use of a modern, integrated database is expected to provide better, more cost-effective, more efficient and more consistent technical assistance to help Iowa animal producers identify and correct problems that could lead to environmental pollution.

ROI Financial Worksheet	
A. Total Annual Pre-Project cost (State Share from Section II C1):	$172,725
B. Total Annual Post-Project cost (State Share from Section II C2):	$0
State Government Benefit (= A-B):	$172,725
Annual Benefit Summary:	$172,725
State Government Benefit:	$172,725
Citizen Benefit:	$39,000
Opportunity Value or Risk/Loss Avoidance Benefit:	$0
C. Total Annual Project Benefit:	$211,725
D. Annual Prorated Cost (From Budget Table):	$135,996
Benefit / Cost Ratio: (C/D) =	1.56
Return On Investment (ROI): ((C-D) / Requested Project Funds) * 100 =	14.50%

[This section to be scored by application evaluator.]

Evaluation (25 Points Maximum)

- The financial analysis contains several questionable entries and provides minimal financial benefit to citizens (0-8 points).

- The financial analysis seems reasonable with few questionable entries and provides a moderate financial benefit to citizens (9-16 points).
- The financial analysis seems reasonable with no problem areas and provides maximum financial benefit to citizens (17-25).

Note: For projects where no State Government Benefit, Citizen Benefit, or Opportunity Value or Risk/Loss Avoidance Benefit is created due to the nature of the project, the Benefit/Cost Ratio and Return on Investment values are set to Zero.

Appendix A. Auditable Outcome Measures

For each of the following categories, <u>list the auditable metrics for success</u> after implementation and <u>identify how they will be measured.</u>

1. Improved customer service
We anticipate going from zero (0) to 65% electronic submittal of manure management plans (MMPs) within the first year of the project. We plan to achieve 95% electronic submittal of MMPs within four years.

The combination of four existing databases into a relational database has resulted in redundant data, some incomplete data and some erroneous data. Clean-up of the existing combined database should reduce the existing redundant data in the open feedlot database by 95 to 100%. Currently approximately 25 to 30% of that database is redundant data (depending on how the data is queried). Similar results can be expected from the other three databases that were combined.

Data clean-up and the addition of hand-held personal digital assistants (PDAs) will improve the accuracy for reporting and planning, eliminating data entry redundancies (from about 25% to between 5% and 0%). Animal feeding operations is a high profile and controversial program area in Iowa. An integrated system will provide better and more timely service to our many customers including the Governor's office, legislators, public interest groups, producers, individual citizens and the media.

An easily accessed and user friendly database will give the DNR the ability to send more information electronically in emergencies such as a manure spill, a fish kill or an epidemic, and provide public notice to downstream livestock producers and public water supplies.

Going to an electronically-submitted manure management plan (MMPs) will allow DNR staff to increase their efficiency and reduce the turn around time for processing MMPs and construction permit applications. Within three years, the DNR plans to process 3,000 MMPs annually compared to a current review rate of about 660 per year. Faster turn around time should also increase producer's satisfaction levels by reducing the time between submitting an application or nutrient plan and the DNR's approval to build or populate a building.

Personal digital assistants (PDAs), geographic information system (GIS) capabilities, and an open feedlot design program will promote better communication between customers and DNR staff members, who can provide alternatives while they are at the customers' sites. These technologies will help standardize the options that customers are offered, allowing DNR staff, private or public engineers to design practices and structures that will bring about 250 open feedlot producers in compliance with state and federal laws within five years.

2. Citizen impact
Cleaning up the data, adding three new elements to the database and training staff on the equipment and software will reduce the DNR's response time to information requests from between one day (for simple

requests) and three weeks (for complex requests) to between four hours and one week.

Fulfilling data requests from the legislature or the press has meant time consuming hand searches through paper records, taking hours of staff time. Further integration of the database and staff training should reduce the time for fulfilling such requests from days to hours.

Further integration of the databases will allow DNR field office staff to access data directly instead of depending on central office to provide the information, cutting query time from days to minutes.

An integrated database will allow staff to look up a history of a producer's activities and any legal actions filed against him or her without checking multiple databases – reducing both time to process the request and the potential for errors.

The DNR will have the data clean-up, software evaluation and design, and purchase of computer and hand-held technologies completed prior to the start of the 2004 legislative session. This will allow legislators to receive accurate and up-to-date information to use in drafting legislation and understanding resource concerns.

3. Cost Savings

Use of electronic manure management plans is expected to reduce clients' time and therefore costs of completing MMPs by $39,000.

Identifying and providing structural alternatives to open feedlots could potentially save livestock producers millions of dollars. Currently these producers are finding it very difficult to find engineers that are qualified to design run-off control basins and solids settling basins. Those who have found engineers and completed structures that help them comply with environmental laws have potentially saved thousands of dollars per site in federal penalties.

Other cost reductions are intangible and cannot be computed accurately.

4. Project reengineering

A recent software update will allow field offices to access the manure applicator database directly. Field offices will no longer have to rely on someone in the Central Office to supply the information to them over the phone. Data will be more readily available to staff members; thus more readily available to Extension offices that are responsible for annual training. Staff will be able to take training on a current software program, which will allow them to process data more easily.

Converting manure applicator certification training to a computer-assisted or web-based application will make it more convenient for producers to take a class. It will also allow long distant training, so that those who are out of state during the training will still be able to complete it. Converting the test to a web-based or other computerized form will decrease staff time for scoring tests and sending paper copies to Des Moines. Some security issues exist and must be surmounted, but computerized training and testing would allow staff to spend more time on technical assistance and plan review.

Providing an electronic manure management plan (MMP) will allow producers to update their plans annually (required by recent passage of Senate File 2293) and submit them with a minimum of difficulty. An electronic MMP will also streamline the review process, by screening entry or calculation errors and requesting the producer to resubmit that information. That will reduce staff time for review.

The proposed open feedlot design alternatives program will provide a quick and consistent way for DNR staff to provide technical assistance in the field to present the alternatives to producers to help them solve problems on their open feedlots. This program will help producers make a rational decision on the types and placement of structures.

Obtaining global positioning systems (GPS) equipment would greatly enhance the accuracy of the many maps that the DNR creates annually for a variety of interest groups.

Purchasing personal digital assistants (PDAs) and developing the software that will link them to the existing database will free up staff time in the field and in the office. The PDAs and programs will enhance the data quality by using a standardized form for data entry and reducing data entry errors. The PDAs will also allow staff to provide engineering design assistance on the producers site.

Purchase of seven (7) power point projectors (one per field office and one for central office) will allow DNR field office staff to get the training that they need from the newly integrated database. It will also allow DNR staff to use data from the integrated databases in presentations to the many groups that are interested in animal feeding operations issues.

5. Source of funds (Budget %)
No Response Required.

6. Tangible/Intangible benefits
Most of the benefits that we've described in this project lead to enhanced customer satisfaction and reductions in staff time or frustration levels. While it's impossible to put a value on those elements, the DNR will be able to provide up-to-date information to a myriad of client groups that includes legislators, the press, commodity and livestock producer groups, public interest groups and citizens. The animal feeding operations program is a high profile program area that generates strong opinions among its client groups. Providing information quickly and accurately is essential.

Better decision-making, improved technical assistance, and accurate data will ultimately be reflected in better care of the natural resources that make Iowa such a productive state. Without clean water and clean air, the state cannot expect to attract people, industries or businesses.